

Meeting of the Decommissioning Community Workgroup (#21)
Tuesday, October 19, 2004
Sandusky High School

The meeting began at 5:30 p.m. Present were the following Workgroup members: John Blakeman, Chris Gasteier, Anne Hinton, Montez McDuffie, Bill Ommert, Ralph Roshong, Bob Speers, David Stein Bill Walker and Mary Warren. In attendance from NASA were: Tim Polich, Decommissioning Project Manager; Sally Harrington, Public Affairs Specialist (NASA Glenn); Bill Wessel, Director of Safety and Mission Assurance (NASA Glenn); Richard Kunath, Chief of the Plum Brook Management Office, and Kevin Coleman, History Officer, (NASA Glenn). In attendance from FOCUS GROUP were Susan Santos, Michael Morgan, Burt Peretsky and Anne Chabot. Also present were seven members of the public.

Tim Polich provided welcoming remarks and introductions of new Workgroup members including Anne Hinton who was attending her first meeting, and Bill Ommert, who was attending his second. Tim also introduced Bill Wessel, Director of Safety and Mission Assurance (NASA Glenn). Susan Santos of FOCUS GROUP requested and received acceptance for the previous (July 13) meeting's minutes, and reviewed the agenda for this evening's agenda, especially inviting Workgroup members to actively participate in the Community Information Session (CIS) that would follow the meeting.

Overview & Project Update

Segmentation

Tim Polich presented the Project Update. He recalled that at the last Workgroup meeting, segmentation was at the point of taking pieces out of the reactor tank, doing this work from long distances, manipulating poles and wrenches 30 feet below, and hauling pieces out of the vessel for packaging and shipping. Tim noted the great progress since then, showing a slide of an empty vessel. He mentioned that the vessel was sprayed with a white substance (known as "lockdown") that would keep any loose contamination in place during removal of the vessel walls.

Tim explained that workers set up scaffolding inside the vessel, with a work platform built on top of it. A milling machine placed on the platform is being used to cut and peel away sections of the reactor tank walls. Tim noted that the segmentation schedule has been adjusted in the name of safety. When workers got inside they found a layer of asbestos, which must be abated. Workgroup member John Blakeman asked if this had been anticipated. Tim said they had suspected a presence but didn't know exactly where the asbestos was located. Currently, there is an entire enclosure over the containment vessel while qualified professionals are removing the asbestos. John then asked about radiation levels, with Tim responding that they were less than three millirem per hour, which is why it was possible to take the thermal shields out and not have to work remotely anymore. John also asked, "How do you account for the fact that radiation was less than anticipated?" Tim noted that it is necessary to estimate in advance of getting the job done. These are conservative estimates that provide health protection for workers.

When John inquired as to how NASA knew the radiation was so low that workers could be in proximity, Tim responded that through monitoring, NASA keeps a close watch on protecting the workers.

Shipping

Tim then showed a series of photos depicting the way Class B & C low-level radioactive waste (LLRW) is loaded for shipping – first in waste liners then into shipping casks. He reported that the sixth and final shipment to Barnwell occurred in August of this year.

Fixed Equipment Removal

Tim noted that Workgroup members who took the recent Reactor Facility (September 16) got to see the Reactor Building. He showed before and after slides of the fixed equipment removal (FER) at the minus 25- foot level and the minus 15-foot level of this building. John Blakeman inquired as to where this material went. Tim explained that the equipment (from –25 and –15 feet) was shipped to Utah (to Envirocare licensed disposal facility for disposal as LLRW). Tim also mentioned that clean, “free-released” material has been recycled (roughly ½ million pounds of clean scrap metal) by a NASA Glenn subcontractor, Blue Star Metal Recycling. In addition, where possible, NASA has reused some clean equipment – such as a large nitrogen tank sent to the Space Power Facility, electrical transformers sent to the Hypersonic Tunnel Facility, and a HEPA (High Efficiency Air Particulate) ventilation system that is now being used to provide filtered air to the Space Power Facility.

Demolition

Tim then showed a slide of the Gas Compressor Building being demolished (in less than a day) – all metal from this building was recycled. He also said the Waste Effluent Monitoring Station had been removed.

Budget/Schedule

Tim distributed a one-page budget summary and one-page project schedule. He explained how “forward funding” helps the project proceed – using this year’s reserved dollars to forward fund the project while NASA operates under an interim period referred to as Continuing Resolution (while Congress votes on budget). He explained that the increase of \$700,000 was due to delays for asbestos abatement, as mentioned in the project update (three months delay in the schedule). Tim added that some loose concrete had been detected behind the asbestos, which prompted NASA to contract with structural experts to check the structural integrity before proceeding safely.

Plum Brook Station Today

Rich Kunath came to Plum Brook Station (PBS) four years ago as the Acting Deputy to Director Bob Kozar, and since last fall has been Chief of the Plum Brook Management Office. He provided an overview followed by a detailed presentation on each test facility. He began saying that Plum Brook Station is the largest piece of contiguous property in Erie County. While the Reactor Facility was the first to be built on the site,

four unique test facilities were built soon after (in the late 1960s and early 70s). Rich then mentioned each of the Plum Brook Station test facilities as follows.

The Cryogenic Propellant Tank Facility, which is also referred to as the “K site” (only because of its location on NASA’s map grid). It is a stainless steel vacuum chamber, 25 feet in diameter, where tests are done using cryogenic fuels –hydrogen, helium, oxygen and nitrogen. Rich added that there is also a brand new facility called the Cryogenic Components Laboratory, which was moved to PBS from Cleveland when NASA Glenn land was given to the Cleveland Hopkins International Airport expansion project. The Cryogenic Components Lab has two very large test cells – one for doing hydrogen work and one for oxygen work (with capacity for several hundreds of thousands of gallons of cryogenic fuels). This and the Cryogenic Propellant Tank Facility are now combined and are called the Cryogenic Test Complex.

The Hypersonic Tunnel Facility was originally built for nuclear thermal rocket development work. It was intended for simulating the heat of a reactor on a rocket - taking hydrogen and picking up heat and expanding it into a nozzle and creating an impulse power that would move the spacecraft ahead. This testing was not implemented because the program was cancelled. Instead, the facility was converted to test air propulsion systems at 5, 6, and 7 times the speed of sound. What’s unique about this facility is that the air is synthesized for cleaner testing.

The Spacecraft Propulsion Test Facility is the world’s largest thermal vacuum chamber that can do altitude testing on engines.

The Space Power Facility, located on the south side of Plum Brook Station, is often mistaken for the Reactor Facility. It is the world’s largest vacuum chamber – 122 feet tall and 100 feet in diameter – and has recently been used for testing on a variety of NASA missions.

Rich said Plum Brook Station sits on 6,400 acres with an additional buffer zone. These four national assets are easily accessible by ground, water and air. John Blakeman asked if the lack of a functioning rail system presents a problem. Rich responded that there could be some real advantages with rail travel though rail overhead clearances are generally too low for many of their large pieces of equipment. Rich mentioned that replacement costs for Plum Brook Station would be about a billion dollars.

He also said that in the Engineering Building there are tenants – FBI, USDA, US Coast Guard, and the US Geological Survey. Also located there are a Sprint tower and the Ohio Air National Guard. Their going-rate office rent helps sustain the infrastructure of the facility. Outside the fence are agricultural tenants. That rent goes to the US Treasury. A new initiative is called Enhanced Use Lease Authority allowing a tenant to use existing PBS infrastructure or build its own under a long-term lease agreement. The money collected from these leases could be used by and for PBS. A proposal has been submitted, which is expected in the next year, to lease PBS raw water lines to Erie County that would build a water plant just west of PBS and provide domestic water. Another

initiative is to renovate and lease office space in the building outside the Reactor Facility fence – the beginnings of a Technology Park. He then provided an in-depth overview of the capabilities and work being conducted at each of the four active test facilities.

K-Site Building

Work conducted at this facility is with densified fuels. For example, enough pressure can be placed on hydrogen to make 800 gallons of densified slush. This slush takes up less volume than liquid allowing: 1) the same amount of fuel to fit in a smaller tank, or 2) the same size tank to hold more fuel to take the craft farther. Work is also being done with jelled hydrogen – densifying it by taking liquid hydrogen and bubbling up methane through it.

Hypersonic Tunnel Facility

Instead of passing an engine through air, here the engine is held still and air is forced by it. Underground is a 3-megawatt graphite heater that takes two weeks to fully heat. As heat goes into the nozzle to make the air speed the air is mixed to the exact kind of air one would experience at the prescribed altitude. This is the world's only non-vitiated (clean air) flow facility. Most facilities heat the air using a big burner that can introduce some contaminants that could impact the engine. With President Bush's Exploration Program, NASA is looking at converting this facility back to a hydrogen capability.

Space Propulsion Testing Facility

The size and capabilities of this facility allow the testing of rockets inside the facility. Most of the facility is below grade – with a 150-foot deep by 150 foot in diameter spray chamber. Above that is a vacuum chamber – 65-feet tall and 43-feet in diameter. This is where an upper stage rocket engine and tankage (liquid hydrogen and oxygen) inside the vacuum chamber can simulate the entire launch profile (from sea level to 120 nautical miles), doing everything but simulating the effects of gravity. The size of this facility is so great that it can test one main engine on the Space Shuttle. Wastewater from the spray chamber is pumped into an on-site pond and treated before released. The source of energy is natural gas boilers, which were just replaced and are about 80% efficient.

Space Power Facility

This facility was meant to do radioactive testing. It contains an 80-foot tall assembly area and a test chamber comprised of a concrete dome that is 8 feet thick, and a disassembly area. This facility has the world's largest pocket doors – weighing 5 million pounds. The vacuum chamber is made of ribbed aluminum. The thick concrete is there to protect from radiation and for withstanding weight of the air on the dome. The facility was never used for radioactive testing and is without radioactive contamination.

Rich then showed a series of slides giving examples of some of the testing that he mentioned above including the Mars Exploration Rover landing gear. Rich showed a brief video of the landing gear inflation testing in action. He also mentioned work on the International Space Station – testing radiators (36 design changes), which were conducted on the ground at PBS at a cost of \$4 million that would have cost \$400 million to repair

in space. Rich mentioned the upcoming testing on James Webb Space Telescope (the eventual replacement for the Hubble). He reported that this telescope would be about a million miles away from Earth when in operation. For this test, PBS will be simulating temperatures at 37 degrees above absolute zero.

Rich concluded by announcing that in 2006 NASA will be celebrating the 50th anniversary of Plum Brook Station. Planning for an Open House is to begin this January. Sally suggested that if anyone is interested in having Rich speak more about PBS at any community gathering or meeting, people can contact her and she will help arrange a speaking engagement.

Susan Santos thanked Rich and mentioned that he would participate in the CIS later in the evening. She emphasized that his presentation is a wonderful complement to extend the message that the NASA Decommissioning Team has promoted for several years - letting people know that the Reactor Facility being decommissioned is only one facility on the site and that PBS is an active testing facility with a lot of interesting work ongoing.

Community Relations Update

Sally Harrington gave a Community Information Session preview – distributing a program of the evening’s activities including the Aero Bus, the documentary “Of Ashes and Atoms”, and Tim’s Project Update presentation; as well as displays, fact sheets and other handouts. She invited Workgroup members to interact with people by answering questions, encouraging them to fill out feedback forms, etc. Sally thanked Susan Santos and her staff at FOCUS GROUP for their work in organizing Workgroup meetings and Community Information Sessions.

Topics for Future Meetings

Susan asked Workgroup members what topics they would like to learn about in future meetings. Several members offered the following ideas: What is going to happen after decommissioning? Why is this (decommissioning) being done? What comes from this investment in millions of dollars? What happens next after NASA achieves unrestricted use? More about what happens behind the fence. Susan mentioned that a presentation on the Final Status Survey (FSS) is being planned and will talk about how NASA can prove the site is clean. She suggested discussion on the FSS could be tied in with “what’s next.” Susan offered the group another presentation on monitoring results, to which they agreed. Another area of interest is in the Army Restoration Project (for the old Ordnance Facility, located in World War II on what is now PBS land. Susan suggested an update on the Ordnance project (looking to Restoration Advisory Board members John Blakeman, and Janet and Mark Bohne to help that happen). Ralph Roshong suggested that a Workgroup meeting be broadcast using community access programming by the local cable channel. This idea met with enthusiasm and will be actively explored. Susan reminded the Workgroup to leave messages (ideas, suggestions, questions) on the Information Line or by E-mail.

The meeting adjourned at 6:45 p.m.